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# The Influence of Spines on Predation of Devonian Brachiopods

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# **The Influence of Spines on Predation of Devonian Brachiopods**

Broc Kokesh

April 18, 2015

Undergraduate Research Symposium

# A long, long time ago...

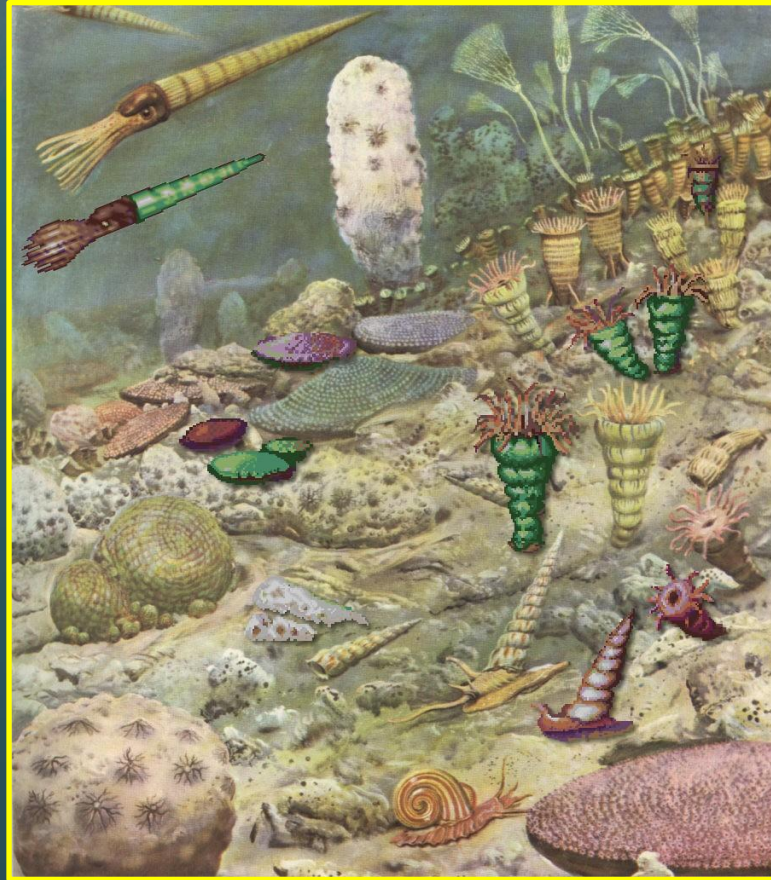


Photo:  
<http://web8.orcaserver.de/ecco/stories/articles/prehistoric.php>

# In an ocean very near here...

# Brachiopod Morphology

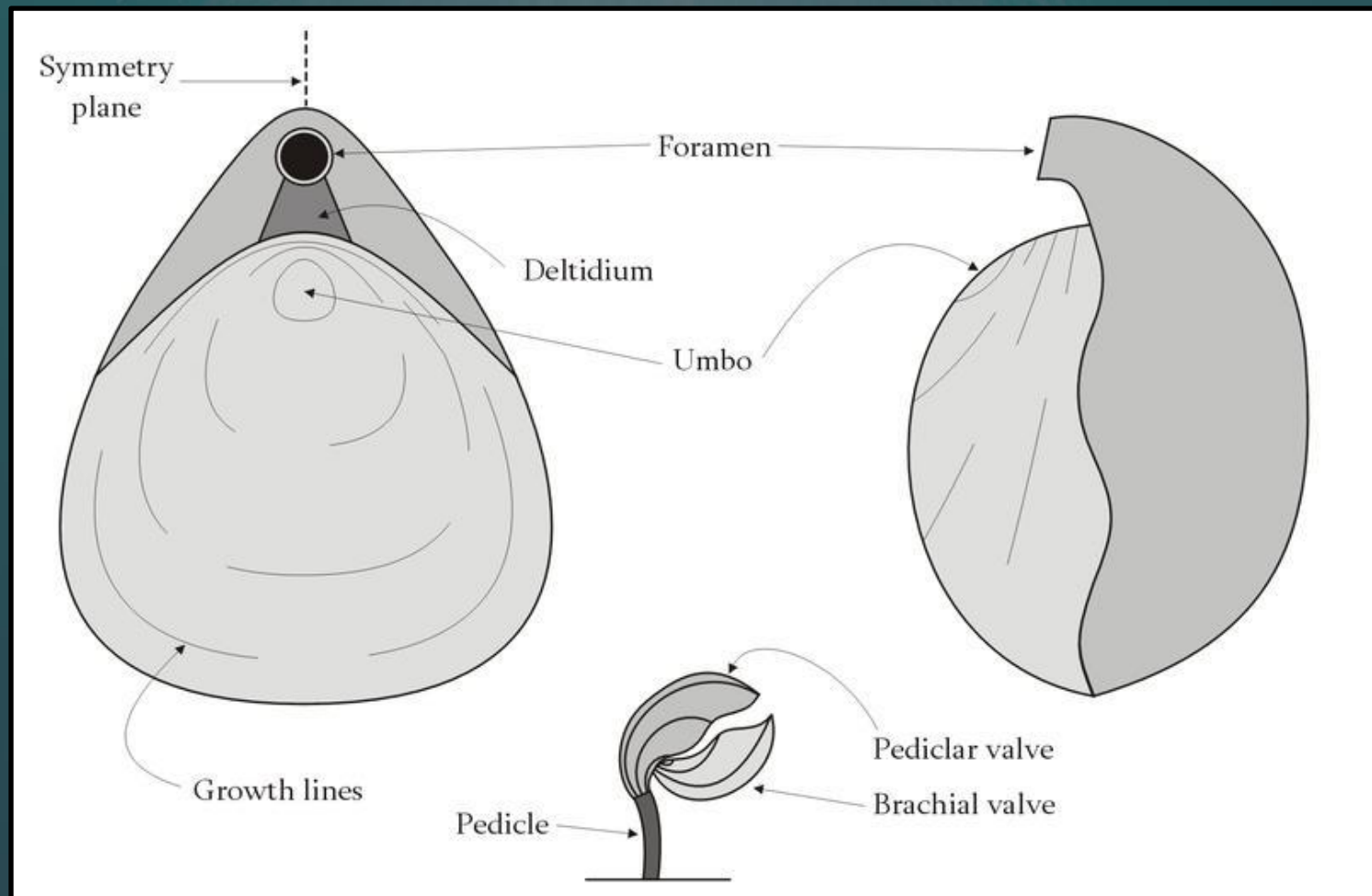


Photo: University of Bristol

# Brachiopod Spines

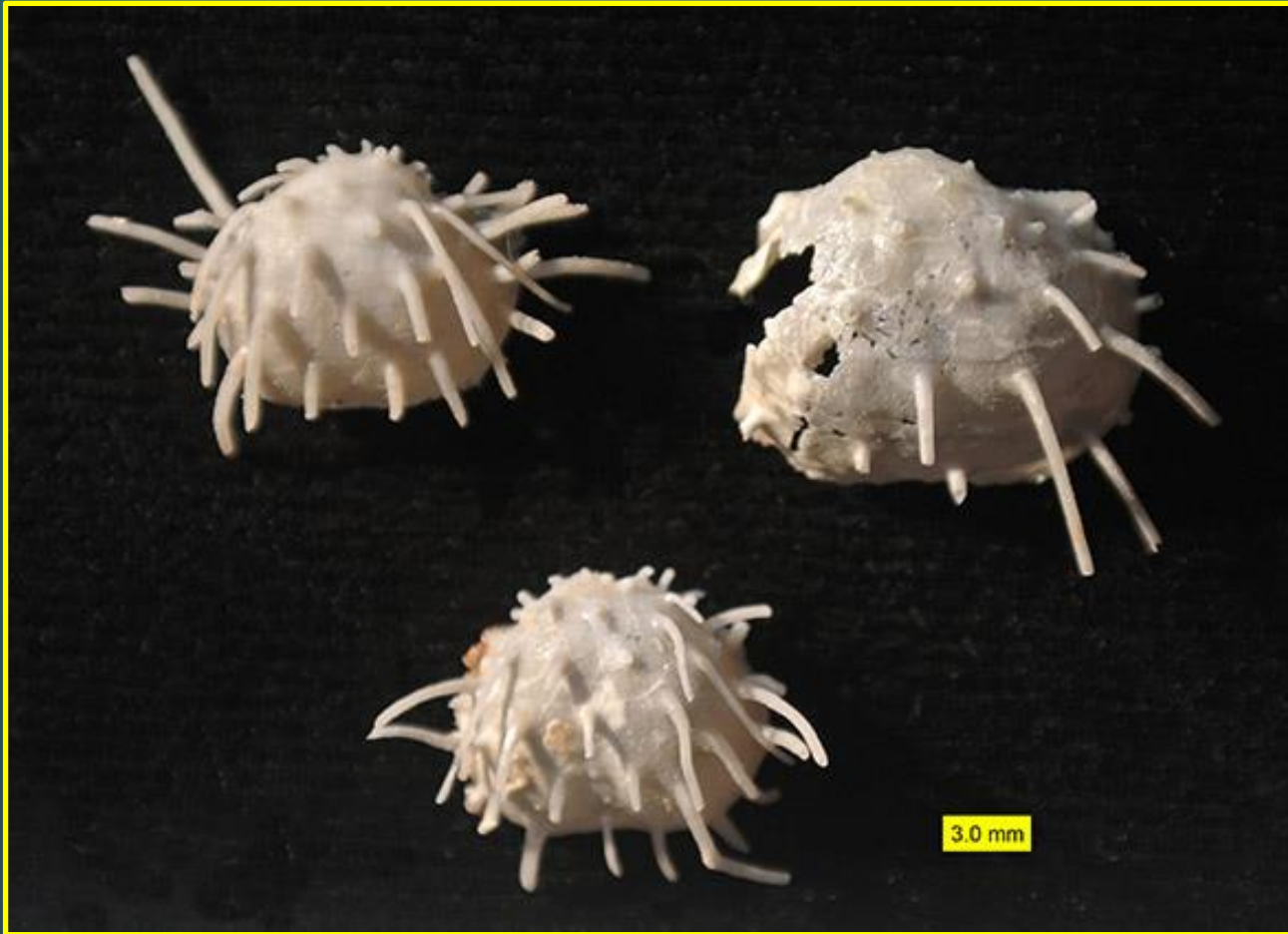
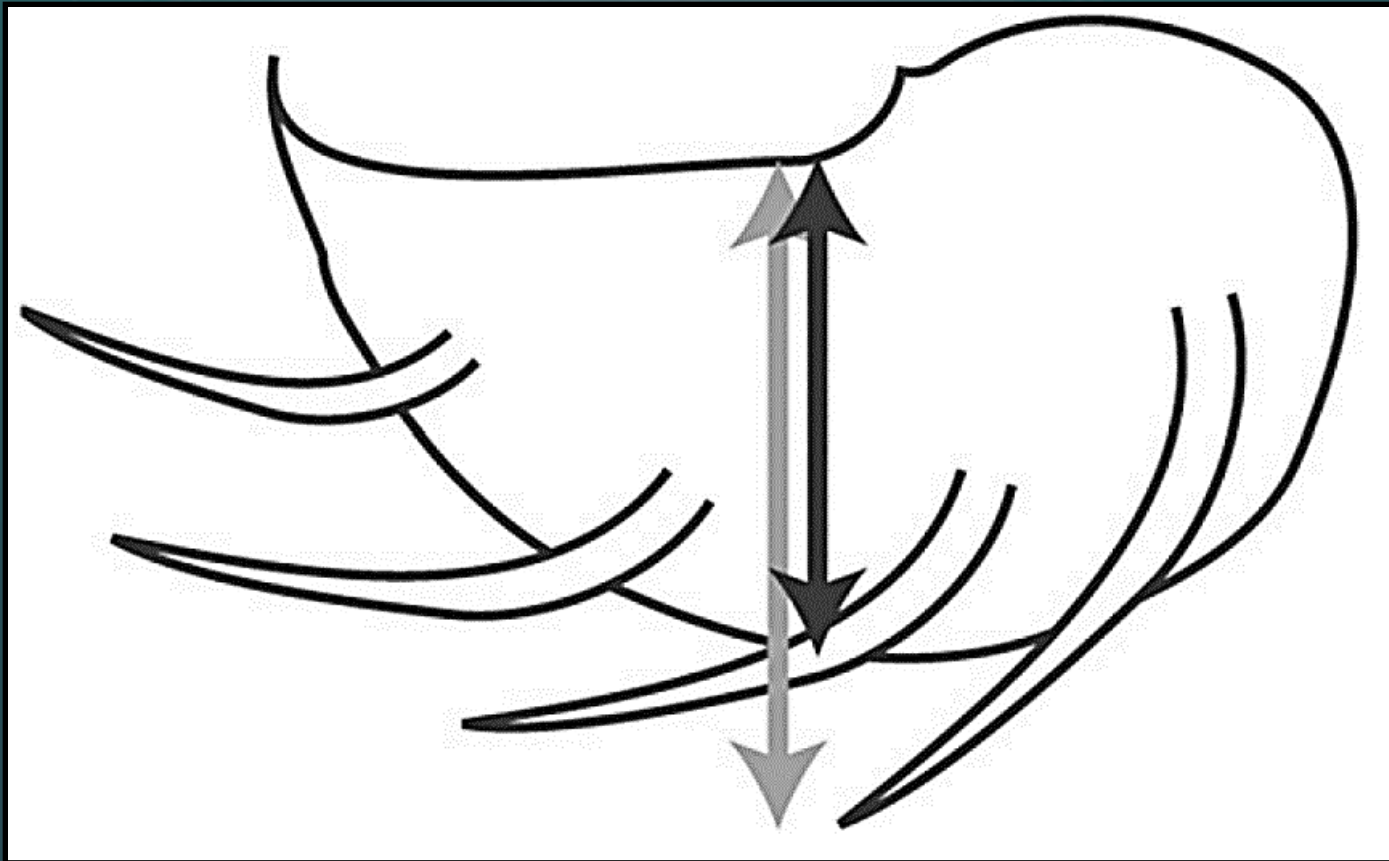


Photo: Mark Wilson



# Brachiopod Spines



From Johnsen *et al.*, 2013

# Question

Do spines assist brachiopods in avoiding predation?



Photo: Fossilid

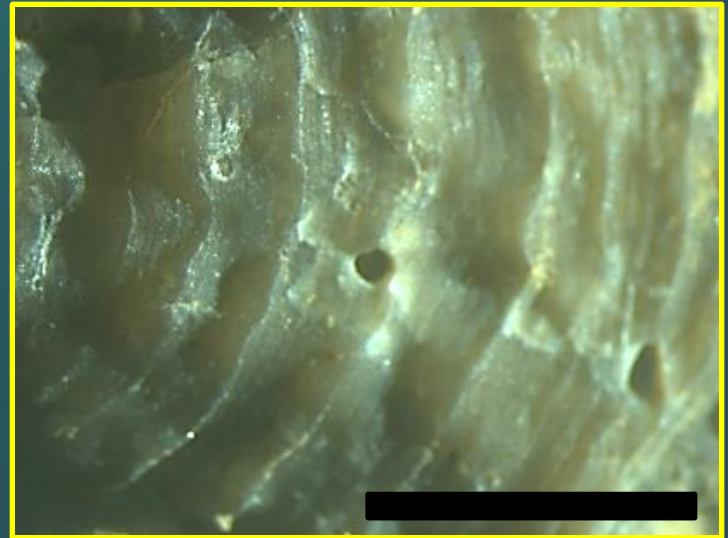


Photo: naris.go.kr

# Signs of Predation



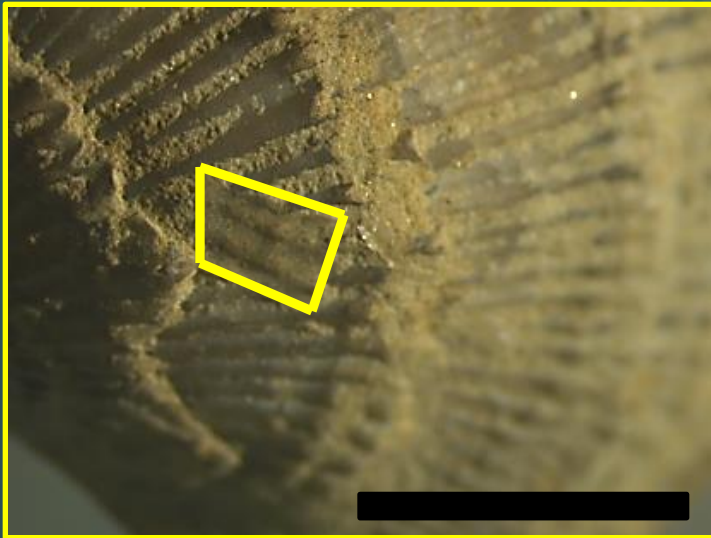
*Atrypa devoniana*



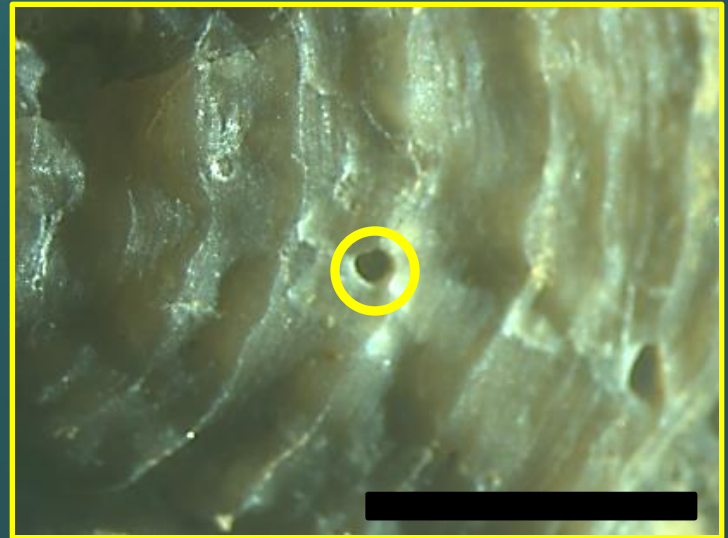
*Atrypa rockfordensis*



# Signs of Predation

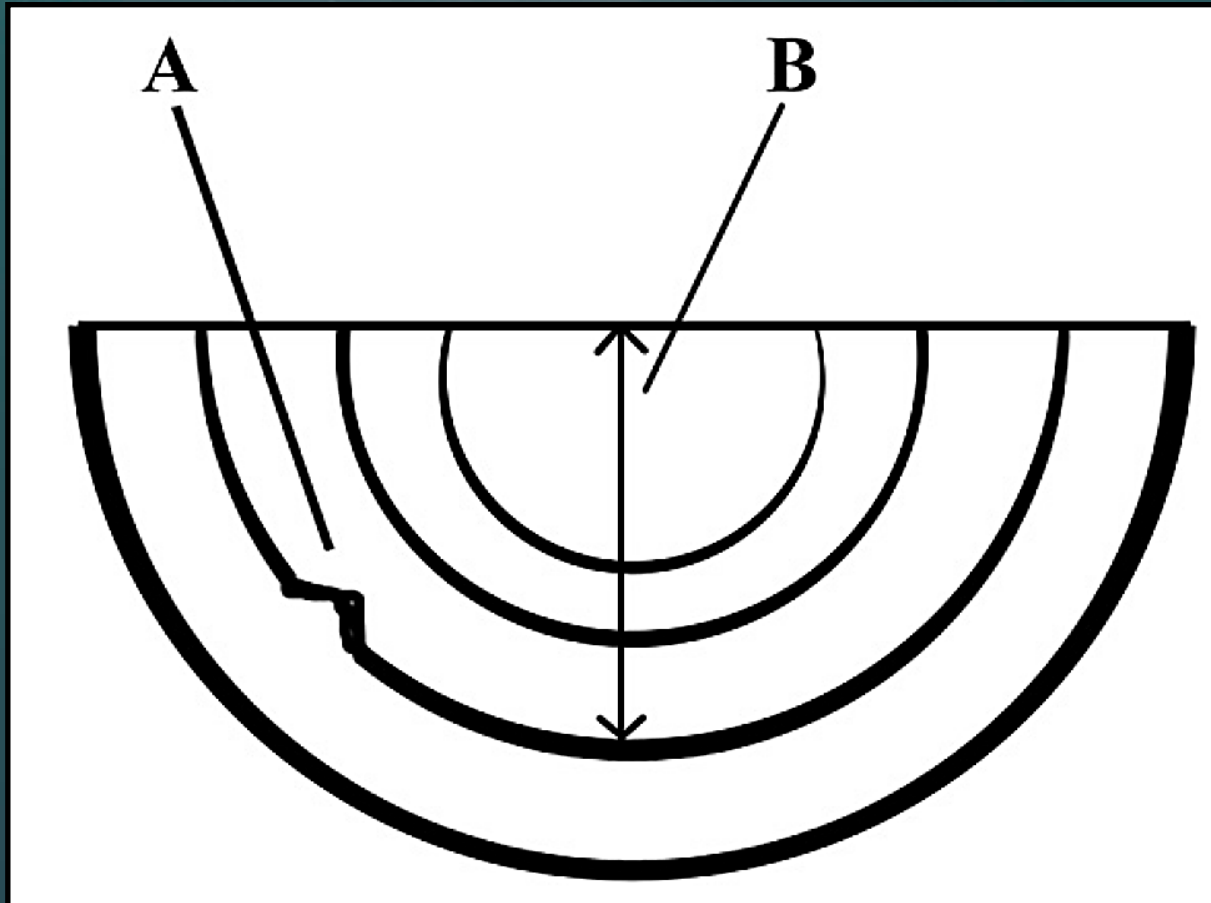


*Atrypa devoniana*



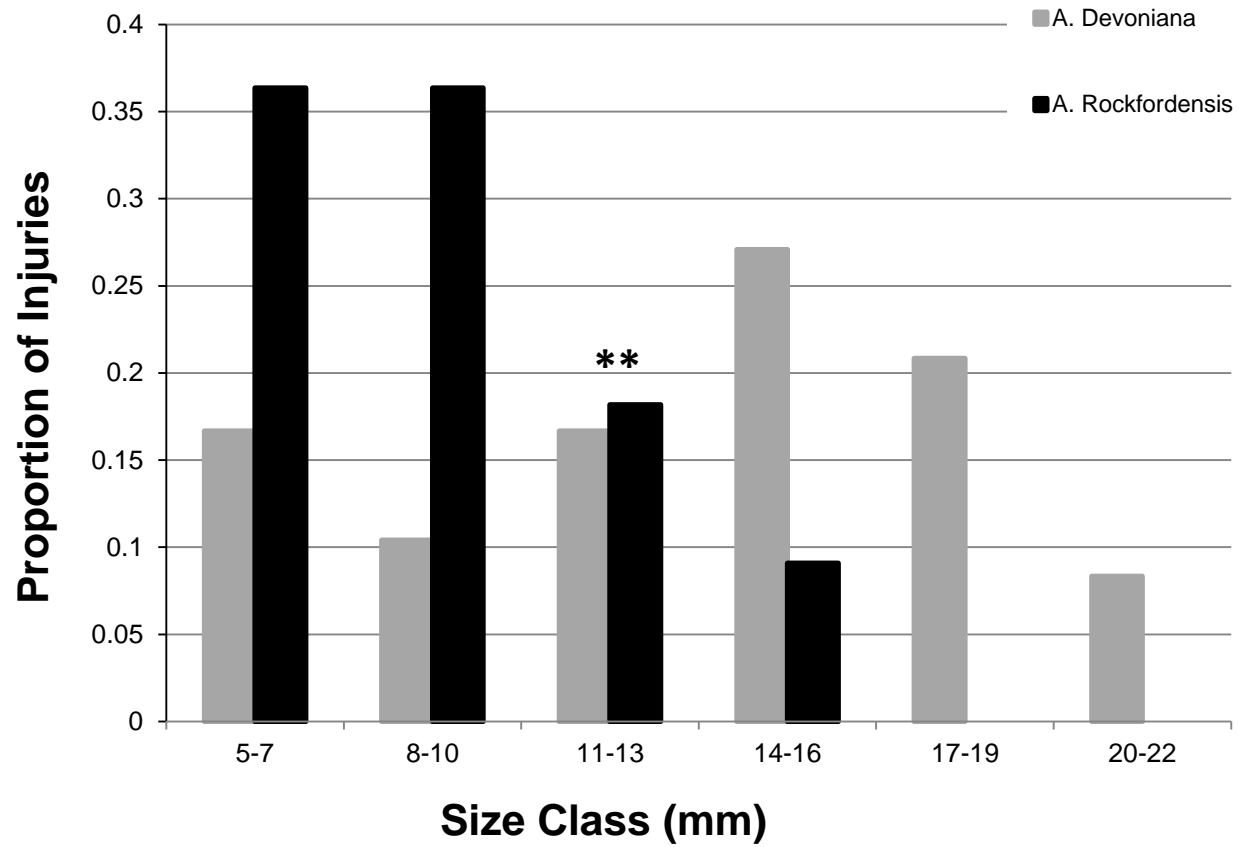
*Atrypa rockfordensis*

# Measurements

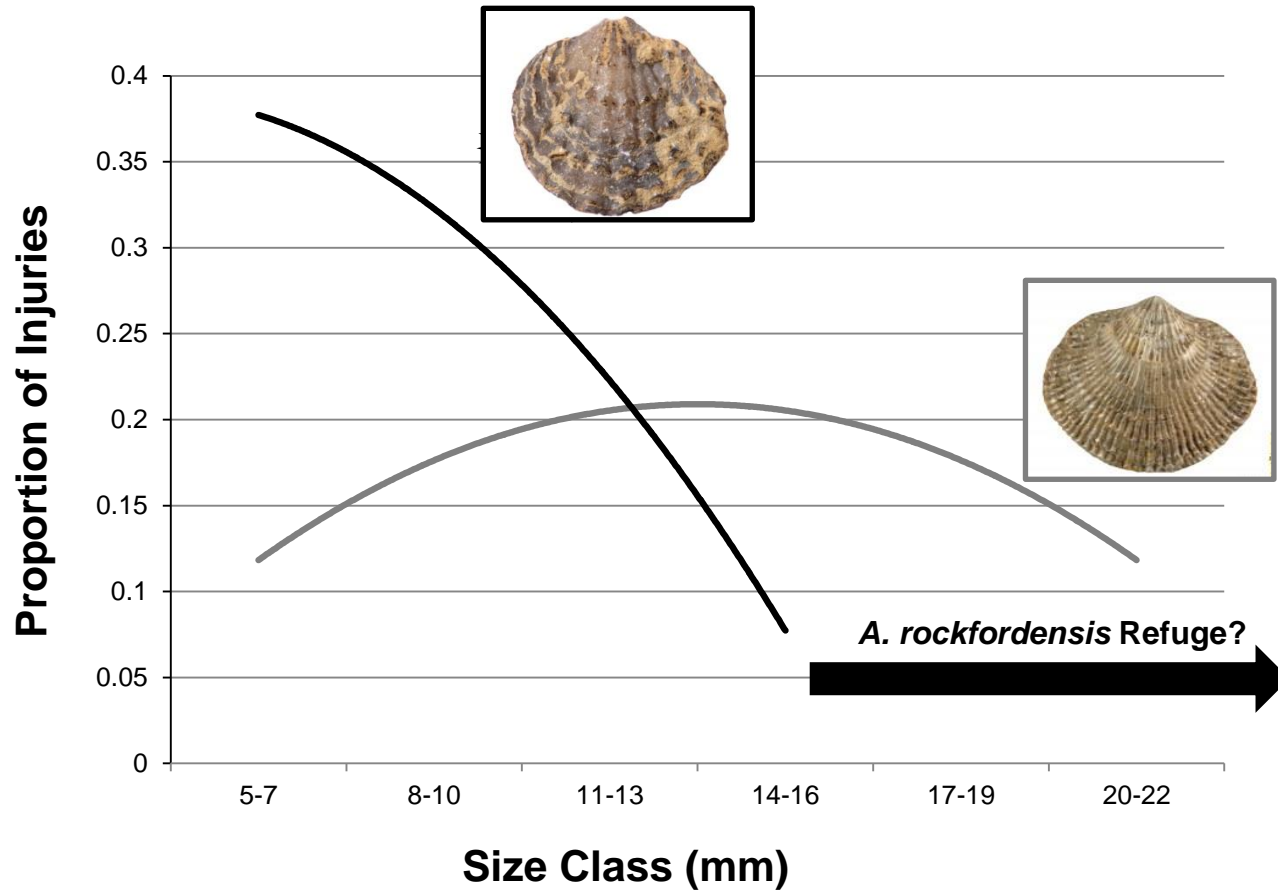


From Johnsen *et al.*, 2013

# Results



# Results



# Results

	Healed Scar	Borehole
<i>A. devoniana</i>	0.917	0.083
<i>A. rockfordensis</i>	0.636	0.364

- ~36% injuries to *A. rockfordensis* caused by boreholes
- Spines help prevent valve damage
- Boring predators need less surface area



# Conclusions

- *A. rockfordensis* attacked less often
- *A. rockfordensis* not attacked above 17mm
- *A. devoniana* attacked at +22mm
- Boring predators less inhibited by spines

# Questions?



<http://bustedtees.com>